

From wang!elf.wang.com!ucsd.edu!info-hams-relay Sun Mar 3 02:40:13 1991 remote
from tosspot
Received: by tosspot (1.63/waf)
via UUCP; Sun, 03 Mar 91 12:26:04 EST
for lee
Received: from somewhere by elf.wang.com id aa15060; Sun, 3 Mar 91 2:40:08 GMT
Received: from ucsd.edu by uunet.UU.NET with SMTP
(5.61/UUNET-primary-gateway) id AA28450; Sat, 2 Mar 91 21:15:42 -0500
Received: by ucsd.edu; id AA21713
sendmail 5.64/UCSD-2.1-sun
Sat, 2 Mar 91 17:18:44 -0800 for nixbur!schroeder.pad
Received: by ucsd.edu; id AA21702
sendmail 5.64/UCSD-2.1-sun
Sat, 2 Mar 91 17:18:40 -0800 for /usr/lib/sendmail -oc -odb -oQ/var/spool/
lqueue -oi -finfo-hams-relay info-hams-list
Message-Id: <9103030118.AA21702@ucsd.edu>
Date: Sat, 2 Mar 91 17:18:37 PST
From: Info-Hams Mailing List and Newsgroup <info-hams-relay@ucsd.edu>
Reply-To: Info-Hams@ucsd.edu
Subject: Info-Hams Digest V91 #194
To: Info-Hams@ucsd.edu

Info-Hams Digest Sat, 2 Mar 91 Volume 91 : Issue 194

Today's Topics:

ARRL BULLETIN 14 ARLB014
ARRL DX 10
N8EMR_BBS_INFO
NASA Prediction Bulletin Format
NASA Prediction Bulletins
No code license

Send Replies or notes for publication to: <Info-Hams@UCSD.Edu>
Send subscription requests to: <Info-Hams-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Info-Hams Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/info-hams".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 2 Mar 91 03:30:30 GMT
From: n8emr!gws@tut.cis.ohio-state.edu (Gary Sanders)
Subject: ARRL BULLETIN 14 ARLB014

To: info-hams@ucsd.edu

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|           Relayed from packet radio via           |
| N8EMR's Ham BBS, 614-895-2553 1200/2400/9600/V.32/PEP/MNP5 |
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ARRL BULLETIN 14 ARLB014
FROM ARRL HEADQUARTERS
NEWINGTON CT FEBRUARY 27, 1991
TO ALL RADIO AMATEURS

THE DATES FOR THE 1991 CQ WW WPX SSB CONTEST ARE MARCH 30-31. SEE
THE LISTING IN FEBRUARY QST FOR FURTHER DETAILS.

-73-

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Gary W. Sanders (gws@n8emr or ...!osu-cis!n8emr!gws), 72277,1325
N8EMR @ W8CQK (ip addr) 44.70.0.1 [Ohio AMPR address coordinator]
HAM BBS (1200/2400/9600/V.32/PEP/MNP=L5) 614-895-2553
Voice: 614-895-2552 (eves/weekends)

Date: 2 Mar 91 03:29:39 GMT
From: n8emr!gws@tut.cis.ohio-state.edu (Gary Sanders)
Subject: ARRL DX 10
To: info-hams@ucsd.edu

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|           Relayed from packet radio via           |
| N8EMR's Ham BBS, 614-895-2553 1200/2400/9600/V.32/PEP/MNP5 |
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DX BULLETIN 10 ARLD010
FROM ARRL HEADQUARTERS
NEWINGTON CT MARCH 1, 1991
TO ALL RADIO AMATEURS

WE WISH STEVE, W9NUF, WITH THE NORTHERN ILLINOIS DX ASSOCIATION,
A SPEEDY RECOVERY AFTER RETURNING HOME YESTERDAY FROM A STAY IN THE
HOSPITAL. SINCE STEVE COULD NOT WRITE THE DX BULLETIN THIS WEEK,
WE WANT TO THANK PAUL, KB1BE, WITH THE CONNECTICUT DX ASSOCIATION
FOR THE FOLLOWING DX INFORMATION.

FROM THE DXCC DESK. TODAY, MARCH 1, 1991 IS THE FIRST DAY THAT

THE 701AA AND 708AA QSL CARDS WILL BE ACCEPTED BY THE DXCC DESK FOR THE NEW YEMEN REPUBLIC. MANY OF THE 708AA QSL CARDS WERE SHIPPED IN PACKAGES AT BULK RATE. THEY WERE NOT ACCEPTED BY THE POSTAL SERVICE OF FRANCE AND HAVE BEEN RETURNED. QSL MANAGERS IN FRANCE WILL HAVE TO INDIVIDUALLY STAMP THE ENVELOPES AND SHIP THEM FROM FRANCE.

ETHIOPIA, ET. ET2A, JACK, IS ACTIVE DAILY ON 21300 KHZ AROUND 1830 UTC OPERATING BOTH NET AND SPLIT OPERATIONS. ALSO, CHECK 28580 AND 28600 KHZ AROUND 1900 UTC. BOTH JACK AND SECOND OPERATOR, SCOTT, ARE AMERICANS WORKING WITH THE RED CROSS IN ETHIOPIA. QSL VIA PETER, WB2WOW.

BANGLADESH, S2. VK9NS, JIM SMITH, SHOULD BE EN ROUTE TO DHAKA SHORTLY. HE HAS PERMISSION FOR CW, SSB AND RTTY AND EXPECTS TO OPERATE FOR TWO WEEKS AFTER ARRIVING LATE ON MARCH 11TH; HIS CALL SIGN WILL BE EITHER S21U OR HIS REQUESTED CALL OF S21JS. QSL VIA VK9NS.

CAMEROON, TJ. TJ1BJ IS NOW ACTIVE ON 75 METERS ON SATURDAY AROUND 0500 UTC. CHECK FOR SPLIT OPERATION ON 3675 KHZ AND 3795 KHZ. ALSO, ON SATURDAYS AND MONDAYS, LOOK FOR HIM AROUND 1230 UTC ON 21303 KHZ. QSL VIA K4UTE.

CYPRUS, BRITISH SOVERIGN BASES, ZC4. GLYNN, G4MVA IS NOW STATIONED HERE FOR THE NEXT TWO YEARS. HE WILL SIGN ZC4CZ ON ALL BANDS WITH EMPHASIS ON CW.

ARRL INTERNATIONAL DX PHONE CONTEST. GOOD LUCK THIS WEEKEND, MARCH 2 AND 3, IN THE ANNUAL ARRL INTERNATIONAL DX PHONE CONTEST. IT RUNS A FULL 48 HOURS FROM 0000 UTC SATURDAY, MARCH 2 UNTIL 2400 UTC ON SUNDAY, MARCH 3. REMEMBER THAT THE 10, 18 AND 24 MHZ BANDS ARE EXCLUDED FROM THE CONTEST. LOGS MAY BE SUBMITTED ON IBM COMPATIBLE, MS-DOS FORMATTED DISKETTES, EITHER 3.5 OR 5.25 INCH, 40 OR 80 TRACK. THE LOG INFORMATION MUST BE IN AN ASCII FILE, FOLLOWING THE ARRL SUGGESTED STANDARD FILE FORMAT AND CONTAINING ALL LOG EXCHANGE INFORMATION.

-73-

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Gary W. Sanders (gws@n8emr or ...!osu-cis!n8emr!gws), 72277,1325
N8EMR @ W8CQK (ip addr) 44.70.0.1 [Ohio AMPR address coordinator]
HAM BBS (1200/2400/9600/V.32/PEP/MNP=L5) 614-895-2553
Voice: 614-895-2552 (eves/weekends)

Date: 2 Mar 91 04:24:50 GMT
From: n8emr!gws@tut.cis.ohio-state.edu (Gary Sanders)
Subject: N8EMR_BBS_INFO
To: info-hams@ucsd.edu

The N8EMR Ham bbs is online to serve the needs of the
amateur radio operators..

1/26/91 The BBS is now running on the 386 machine.

12/5/90 Columbus and HBBS are now available via PC pursuit dialout.

7/15/90: This BBS is now part of the AMSAT BBS network..

HOW TO ACCESS THE N8EMR HAM RADIO TELEPHONE BBS !!!

System Name: N8EMR
Phone: 614-895-2553
Login: hbbs
Data Settings: 8 Bits, NO Parity, 1 Stop Bit
Times: 24hrs
IP Address: 44.70.0.1
Amateur radio anonymous ftp access is available via the ohio
netrom/ip network. CMHIP is the Netrom node Id and is known
by most of the nodes in ohio. (its slow but it works)
This is only via the ohio packet network. This sytem
is not available via the "INTERNET".

To access the system via the dialup, at the login prompt type hbbs
(lower case only), you will then enter the BBS program. Follow the
directions from the bbs prompts.

I attempt to keep the latest and greatest HAM software on-line, and encourage
all to upload Here is some of software that is available for downloading.

KA9Q TCP/IP Software for various computers, PC,atari-st,Mac, amgia, unix
MORSE CODE Tutors
Modifications for HAM Rigs and Scanners
DX and contesting programs
Various amateur Newsletters
Packet Terminal programs
AMSAT news and satellite keplerian elements

Files and messages areas for AMSAT, GENERAL topics, PACKET,
KA9Q, MODS to various rigs, TVRO,SCANNER and SWL.
Many mb of of file of interest to the radio operator.

Question or comments to

Gary W. Sanders (gws@n8emr or ...!osu-cis!n8emr!gws), 72277,1325
N8EMR @ W8CQK (ip addr) 44.70.0.1 [Ohio AMPR address coordinator]
HAM BBS (1200/2400/9600/V.32/PEP/MNP=L5) 614-895-2553
Voice: 614-895-2552 (eves/weekends)

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Gary W. Sanders (gws@n8emr or ...!osu-cis!n8emr!gws), 72277,1325
N8EMR @ W8CQK (ip addr) 44.70.0.1 [Ohio AMPR address coordinator]
HAM BBS (1200/2400/9600/V.32/PEP/MNP=L5) 614-895-2553
Voice: 614-895-2552 (eves/weekends)

Date: Sat, 2 Mar 91 12:34:07 -0500
From: TS Kelso <tkelso@blackbird.afit.af.mil>
Subject: NASA Prediction Bulletin Format
To: info-hams@wsmr-simtel20.army.mil

As a service to the satellite user community, the following description of the NASA Prediction Bulletin's two-line orbital element set format is uploaded to sci.space on a monthly basis. The most current orbital elements from the NASA Prediction Bulletins are carried on the Celestial BBS, (513) 427-0674, and are updated several times weekly. Documentation and tracking software are also available on this system. The Celestial BBS may be accessed 24 hours/day at 300, 1200, or 2400 baud using 8 data bits, 1 stop bit, no parity.

=====
Data for each satellite consists of three lines in the following format:

AAAAAAAAAAAA
1 NNNNNNU NNNNNAAAA NNNNN.NNNNNNNNN +.NNNNNNNNN +NNNNN-N +NNNNN-N N NNNNN
2 NNNNN NNN.NNNN NNN.NNNN NNNNNNNN NNN.NNNN NNN.NNNN NN.NNNNNNNNNNNNNNN

Line 1 is a eleven-character name.

Lines 2 and 3 are the standard Two-Line Orbital Element Set Format identical to that used by NASA and NORAD. The format description is:

Line 2
Column Description
01-01 Line Number of Element Data
03-07 Satellite Number
10-11 International Designator (Last two digits of launch year)
12-14 International Designator (Launch number of the year)
15-17 International Designator (Piece of launch)

19-20	Epoch Year (Last two digits of year)
21-32	Epoch (Julian Day and fractional portion of the day)
34-43	First Time Derivative of the Mean Motion
	or Ballistic Coefficient (Depending on ephemeris type)
45-52	Second Time Derivative of Mean Motion (decimal point assumed; blank if N/A)
54-61	BSTAR drag term if GP4 general perturbation theory was used. Otherwise, radiation pressure coefficient. (Decimal point assumed)
63-63	Ephemeris type
65-68	Element number
69-69	Check Sum (Modulo 10) (Letters, blanks, periods = 0; minus sign = 1; plus sign = 2)

Line 3

Column	Description
01-01	Line Number of Element Data
03-07	Satellite Number
09-16	Inclination [Degrees]
18-25	Right Ascension of the Ascending Node [Degrees]
27-33	Eccentricity (decimal point assumed)
35-42	Argument of Perigee [Degrees]
44-51	Mean Anomaly [Degrees]
53-63	Mean Motion [Revs per day]
64-68	Revolution number at epoch [Revs]
69-69	Check Sum (Modulo 10)

All other columns are blank or fixed.

Example:

NOAA 6

1	11416U		86	50.28438588	0.000000140		67960-4	0	5293
2	11416	98.5105	69.3305	0012788	63.2828	296.9658	14.24899292346978		

Note that the International Designator fields are usually blank, as issued in the NASA Prediction Bulletins.

--

Dr TS Kelso	Assistant Professor of Space Operations
tkelso@blackbird.afit.af.mil	Air Force Institute of Technology

Date: Sat, 2 Mar 91 12:33:15 -0500
 From: TS Kelso <tkelso@blackbird.afit.af.mil>
 Subject: NASA Prediction Bulletins
 To: info-hams@wsmr-simtel20.army.mil

The most current orbital elements from the NASA Prediction Bulletins are carried on the Celestial BBS, (513) 427-0674, and are updated several times weekly. Documentation and tracking software are also available on this system. As a service to the satellite user community, the most current of these elements are uploaded weekly to sci.space. This week's elements are provided below. The Celestial BBS may be accessed 24 hours/day at 300, 1200, or 2400 baud using 8 data bits, 1 stop bit, no parity.

- Current NASA Prediction Bulletins #816 -

Alouette 1

1 00424U 62B-A 1 91 57.38534561 .00000402 00000-0 46936-3 0 3875
2 00424 80.4627 35.4463 0022829 343.0761 16.9636 13.67464241417439

ATS 3

1 03029U 67111 A 91 57.91172609 -.00000075 00000-0 99999-4 0 5052
2 03029 13.5206 19.0399 0009867 229.8047 130.1337 1.00272780 85341

Cosmos 398

1 04966U 71 16 A 91 60.15923436 .00065876 19099-4 35241-3 0 4110
2 04966 51.5342 293.3188 2094307 287.3813 50.9920 11.44162145620606

Starlette

1 07646U 75010 A 91 55.84418340 -.00000008 00000-0 40866-4 0 1986
2 07646 49.8251 241.5438 0205835 305.3797 52.7879 13.82150470810725

LAGEOS

1 08820U 76039 A 91 58.19593728 .00000006 00000-0 99999-4 0 1942
2 08820 109.8443 82.4890 0044448 184.3735 175.6659 6.38664199 90229

GOES 2

1 10061U 77048 A 91 56.90226824 -.00000259 00000-0 99999-4 0 5619
2 10061 8.6620 60.6274 0002965 308.5614 51.5400 1.00272636 51554

IUE

1 10637U 78012 A 91 53.04371539 -.00000183 00000-0 79862-4 0 2054
2 10637 32.6985 114.8628 1411526 0.1114 0.0172 1.00300776 8977

GPS-0001

1 10684U 78020 A 91 59.22423765 .00000004 00000-0 99999-4 0 5989
2 10684 63.8566 81.6368 0125608 199.1942 160.3972 2.00554340 80980

GPS-0002

1 10893U 78 47 A 91 55.23221695 -.00000022 00000-0 99999-4 0 3153
2 10893 64.2776 322.6066 0171110 23.5709 337.2288 2.00536004 93721

GOES 3

1 10953U 78062 A 91 54.24446629 .00000093 00000-0 99999-4 0 449
2 10953 7.5467 63.3611 0005358 129.7167 230.4490 1.00268608 7430

SeaSat 1

1 10967U 78064 A 91 58.70992523 .00001350 00000-0 50428-3 0 4703
2 10967 108.0282 127.7799 0004176 225.2954 134.8009 14.36236561663136

GPS-0003

1 11054U 78093 A 91 56.47891328 -.00000021 00000-0 99999-4 0 3538
2 11054 63.7785 318.7351 0063244 116.6387 244.0277 2.00571668 90761

Nimbus 7

1 11080U 78098 A 91 59.68986869 .00000176 00000-0 18867-3 0 7339
2 11080 99.1818 323.5635 0009275 114.7249 245.4893 13.83507221623509

GPS-0004

1 11141U 78112 A 91 53.60830520 .000000004 00000-0 99999-4 0 1297
2 11141 63.8737 81.6459 0062185 314.5593 44.9865 2.00548506 89406

GPS-0005

1 11690U 80 11 A 91 57.23738922 .000000006 00000-0 99999-4 0 968
2 11690 64.3160 83.8239 0121864 203.1355 156.3778 2.00553054 95334

GPS-0006

1 11783U 80 32 A 91 58.03424600 -.000000021 00000-0 99999-4 0 3633
2 11783 63.5816 318.1825 0158825 58.7281 302.8328 2.00568432 79438

GOES 5

1 12472U 81049 A 91 59.14420283 .000000124 00000-0 99999-4 0 511
2 12472 4.1104 72.5957 0002538 277.9701 82.4506 1.00236832 34797

SME

1 12887U 81100 A 91 60.12856453 .01459660 17359-2 11029-2 0 1553
2 12887 97.5694 134.0913 0003145 243.9418 116.2438 16.15716826 1394

Cosmos 1383

1 13301U 82 66 A 91 57.21974122 .000000149 00000-0 16260-3 0 6865
2 13301 82.9323 114.6159 0026578 178.3858 181.7382 13.67883161432409

LandSat 4

1 13367U 82 72 A 91 59.74164800 .000000428 00000-0 99999-4 0 6870
2 13367 98.1275 121.7375 0004246 78.1398 282.0276 14.57177159458665

IRAS

1 13777U 83 4 A 91 58.41625553 .000000705 00000-0 51271-3 0 9041
2 13777 99.0163 256.1234 0013831 43.4107 316.8144 13.98895505 82621

Cosmos 1447

1 13916U 83 21 A 91 58.34750085 .000000246 00000-0 25017-3 0 7829
2 13916 82.9391 183.3982 0037550 146.9025 213.4508 13.74106937397716

TDRS 1

1 13969U 83 26 B 91 58.21693283 .000000127 00000-0 99999-4 0 2705
2 13969 5.0882 63.5592 0002677 295.8208 64.4018 1.00275984 1908

GOES 6

1 14050U 83 41 A 91 59.14834673 .000000117 00000-0 99999-4 0 3730
2 14050 2.8484 74.1925 0005769 306.2731 54.7177 1.00269741 703

OSCAR 10

1 14129U 83 58 B 91 55.57882585 .000000085 00000-0 99999-4 0 6370
2 14129 25.8829 158.8436 5990053 219.9576 75.4840 2.05878121 29933

GPS-0008

1 14189U 83 72 A 91 58.46413640 .000000003 00000-0 99999-4 0 9008
2 14189 63.4968 79.8693 0144294 224.4867 134.4066 2.00568768 55882

LandSat 5

1 14780U 84 21 A 91 59.77507228 .000000427 00000-0 99999-4 0 5377
2 14780 98.2490 121.4040 0001788 89.3243 270.8171 14.57100403372080

UoSat 2

1 14781U 84 21 B 91 60.09687576 .000003301 00000-0 60607-3 0 9270
2 14781 97.9206 108.8852 0012012 149.2154 210.9887 14.66303947373607

GPS-0009

1 15039U 84 59 A 91 53.65102138 .000000003 00000-0 99999-4 0 1666
2 15039 63.2401 79.1327 0028641 226.2083 133.6135 2.00566156 49061

Cosmos 1574

1 15055U 84 62 A 91 58.99503332 .00000170 00000-0 17116-3 0 317
2 15055 82.9519 233.7135 0028190 334.6616 25.3159 13.73414854335180

GPS-0010

1 15271U 84 97 A 91 55.59008626 -.00000021 00000-0 99999-4 0 62
2 15271 63.0840 317.6870 0112277 331.3656 28.0708 2.00563429 46217

Cosmos 1602

1 15331U 84105 A 91 59.60057297 .00007531 00000-0 99869-3 0 4895
2 15331 82.5375 123.0581 0021764 208.6980 151.3036 14.79578477345985

NOAA 9

1 15427U 84123 A 91 60.00671138 .00001423 00000-0 78586-3 0 7073
2 15427 99.1729 70.9190 0015357 11.9560 348.1977 14.12848339320240

GPS-0011

1 16129U 85 93 A 91 59.29801625 .00000004 00000-0 99999-4 0 7284
2 16129 64.0127 80.1390 0123453 148.0089 212.8154 2.00564630 39494

Mir

1 16609U 86 17 A 91 60.12358103 .00052813 00000-0 58326-3 0 2903
2 16609 51.6075 115.0938 0013929 353.8174 6.2465 15.62409428288248

SPOT 1

1 16613U 86 19 A 91 59.69068762 .00001363 00000-0 65753-3 0 2512
2 16613 98.7064 135.4621 0001293 136.6767 223.4516 14.20089499100332

Cosmos 1766

1 16881U 86 55 A 91 60.36131507 .00000753 00000-0 99999-4 0 3325
2 16881 82.5251 181.0763 0023063 223.1351 136.8155 14.78969489247148

EGP

1 16908U 86 61 A 91 50.85202188 -.00000025 00000-0 99999-4 0 3401
2 16908 50.0086 214.6139 0011694 104.5426 255.6708 12.44392558205692

NOAA 10

1 16969U 86 73 A 91 53.88031523 .00001416 00000-0 63395-3 0 5529
2 16969 98.5765 80.9476 0012373 260.5624 99.4157 14.23917603230284

MOS-1

1 17527U 87 18 A 91 60.07938896 .00000743 00000-0 57809-3 0 7570
2 17527 99.0801 133.9836 0000708 102.1046 258.0198 13.94899824205077

GOES 7

1 17561U 87 22 A 91 56.86775670 -.00000045 00000-0 99999-4 0 7319
2 17561 0.0618 268.9175 0002204 82.2191 8.8338 1.00270557 8113

Kvant-1

1 17845U 87 30 A 91 60.12355734 .00069877 00000-0 76800-3 0 4883
2 17845 51.6051 115.0960 0013776 353.2530 6.6781 15.62418782222976

DMSF B5D2-3

1 18123U 87 53 A 91 59.81042973 .00001744 00000-0 92954-3 0 8645
2 18123 98.8112 251.9730 0014744 16.7328 343.4332 14.14372899190673

RS-10/11

1 18129U 87 54 A 91 59.92188924 .00000428 00000-0 45835-3 0 5394
2 18129 82.9291 138.8645 0013146 123.4224 236.8239 13.72152865184749

Meteor 2-16

1 18312U 87 68 A 91 60.03160803 .00000223 00000-0 19236-3 0 6102
2 18312 82.5566 86.7348 0010878 255.9782 104.0203 13.83740103178508

Meteor 2-17

1 18820U 88 5 A 91 59.98965918 .00000662 00000-0 58067-3 0 4582
2 18820 82.5478 146.3224 0016063 328.5459 31.4741 13.84440764155719

DMSP B5D2-4

1 18822U 88 6 A 91 59.88808813 .00001251 00000-0 58540-3 0 8006
2 18822 98.6151 298.1593 0005586 251.0406 109.0184 14.21792837159295

Glonass 34

1 19163U 88 43 A 91 58.42324825 .00000020 00000-0 99999-4 0 1797
2 19163 64.9187 150.6222 0007099 192.8151 167.1889 2.13102584 21589

Glonass 36

1 19165U 88 43 C 91 56.60312716 -.00000007 00000-0 -67261 2 0 1750
2 19165 64.8995 150.6839 0004334 329.5678 30.4228 2.13102095 21545

AO-13

1 19216U 88 51 B 91 53.11378759 -.00000126 00000-0 99999-4 0 2396
2 19216 56.8252 109.0878 7128019 247.8593 26.4295 2.09703733 20642

OKEAN 1

1 19274U 88 56 A 91 60.06425347 .00004574 00000-0 62486-3 0 593
2 19274 82.5151 280.0985 0021937 8.7603 351.3987 14.78252975142851

Meteor 3-2

1 19336U 88 64 A 91 60.06448328 .00000052 00000-0 11717-3 0 7095
2 19336 82.5440 95.7138 0018732 33.0749 327.1551 13.16913552124767

Glonass 39

1 19503U 88 85 C 91 58.96912119 -.00000017 00000-0 99999-4 0 1011
2 19503 65.4339 29.9654 0005129 208.6151 151.3544 2.13103611 19084

NOAA 11

1 19531U 88 89 A 91 58.30885065 .00001429 00000-0 80178-3 0 4628
2 19531 99.0168 12.3710 0011035 288.3921 71.6050 14.11942725124968

TDRS 2

1 19548U 88 91 B 91 58.04983405 .00000113 00000-0 99999-4 0 2334
2 19548 0.7490 80.7494 0001523 230.1933 49.0067 1.00274517 7474

Glonass 40

1 19749U 89 1 A 91 59.47970648 .00000020 00000-0 99999-4 0 8830
2 19749 64.8620 150.2501 0006212 273.4102 86.5479 2.13101762 16629

Glonass 41

1 19750U 89 1 B 91 59.53785316 .00000020 00000-0 99999-4 0 9386
2 19750 64.8738 150.2704 0006268 251.2498 108.7209 2.13102294 16628

GPS BII-01

1 19802U 89 13 A 91 58.17527061 .00000017 00000-0 99999-4 0 2319
2 19802 55.0455 187.3559 0050904 163.2354 196.8890 2.00558153 14865

Akebono

1 19822U 89 16 A 91 59.20862343 .00040444 00000-0 24571-2 0 9490
2 19822 75.0790 112.1402 4111782 56.5684 336.3253 7.23683963 18181

Meteor 2-18

1 19851U 89 18 A 91 60.02883357 .00000114 00000-0 97659-4 0 4083
2 19851 82.5266 23.8250 0015151 10.4016 349.7467 13.84062106101092

MOP-1

1 19876U 89 20 B 91 56.56887326 .00000024 00000-0 99999-4 0 1803
2 19876 0.2641 44.4113 0000955 281.1935 34.3459 1.00267724 3203

TDRS 3

1 19883U 89 21 B 91 51.69564572 -.000000235 00000-0 99999-4 0 2307
2 19883 0.7266 79.1373 0001446 255.1676 25.6685 1.00271504 77386

GPS BII-02

1 20061U 89 44 A 91 58.00437706 -.000000034 00000-0 99999-4 0 2332
2 20061 54.8640 5.4895 0089842 183.4176 176.5173 2.00566400 12602

Nadezhda 1

1 20103U 89 50 A 91 59.06380471 .000000155 00000-0 15425-3 0 3053
2 20103 82.9596 96.4020 0039462 46.6941 313.7500 13.73650359 82845

GPS BII-03

1 20185U 89 64 A 91 57.34599602 .000000016 00000-0 99999-4 0 1766
2 20185 54.8906 188.1900 0021289 164.8064 195.2144 2.00568043 11161

GPS BII-04

1 20302U 89 85 A 91 41.91577973 -.000000024 00000-0 99999-4 0 1785
2 20302 54.4598 307.3315 0032510 329.9999 29.8633 2.00556091 9656

Meteor 3-3

1 20305U 89 86 A 91 60.06321791 .000000043 00000-0 99999-4 0 3211
2 20305 82.5481 36.8210 0016945 47.5625 312.6925 13.15939904 64736

COBE

1 20322U 89 89 A 91 58.53785074 .000000622 00000-0 42322-3 0 2534
2 20322 99.0191 71.4235 0009170 24.0296 336.1330 14.02977747 65291

Kvant-2

1 20335U 89 93 A 91 60.05962752 .00046708 00000-0 51718-3 0 5888
2 20335 51.6082 115.4169 0014024 355.0106 5.0907 15.62395391 71895

GPS BII-05

1 20361U 89 97 A 91 57.38502607 .000000013 00000-0 99999-4 0 1274
2 20361 55.0291 130.2693 0062755 59.5762 301.0593 2.00584931 8820

SPOT 2

1 20436U 90 5 A 91 59.72637513 .00001276 00000-0 61657-3 0 4918
2 20436 98.7078 135.5730 0000909 74.2819 285.8454 14.20049726 57158

UO-14

1 20437U 90 5 B 91 58.71776629 .000000916 00000-0 37840-3 0 3072
2 20437 98.6772 138.8129 0011646 124.9257 235.3150 14.28918095 57353

UO-15

1 20438U 90 5 C 91 58.72486793 .000000600 00000-0 25534-3 0 1934
2 20438 98.6811 138.7456 0010604 124.0412 236.1813 14.28566264 57348

PACSAT

1 20439U 90 5 D 91 59.66991119 .000000992 00000-0 40759-3 0 2023
2 20439 98.6802 140.0226 0012384 123.1338 237.1038 14.29016114 57495

DO-17

1 20440U 90 5 E 91 59.65616971 .00001077 00000-0 44042-3 0 2017
2 20440 98.6806 140.0431 0012003 123.1299 237.1040 14.29083383 57498

WO-18

1 20441U 90 5 F 91 60.12024133 .000000958 00000-0 39306-3 0 2008
2 20441 98.6817 140.5536 0013150 122.9723 237.2736 14.29151065 57569

LO-19

1 20442U 90 5 G 91 59.68037826 .000000960 00000-0 39336-3 0 2018
2 20442 98.6802 140.1568 0013164 123.5426 236.7021 14.29225076 57506

GPS BII-06

1	20452U	90	8	A	91	56.28457796	.000000004	000000-0	99999-4	0	1523
2	20452	54.4054	245.6591	0044363	51.1980	309.2069	2.00554453	7928			

MOS-1B

1	20478U	90	13	A	91	58.10428064	-.000000004	000000-0	99999-5	0	5072
2	20478	99.1595	131.8875	0001205	109.5663	250.5672	13.94838912	53678			

DEBUT

1	20479U	90	13	B	91	58.44079657	.000000015	000000-0	63229-4	0	1871
2	20479	99.0189	61.4649	0540905	190.0970	168.8902	12.83170741	49482			

FO-20

1	20480U	90	13	C	91	54.93675532	.000000060	000000-0	18626-3	0	1800
2	20480	99.0207	58.6263	0540647	198.1288	159.9850	12.83172227	49034			

MOS-1B R/B

1	20491U	90	13	D	91	58.02692999	.000000490	000000-0	96700-3	0	2034
2	20491	99.0147	71.9202	0471059	153.8204	208.7576	13.02800398	49583			

LACE

1	20496U	90	15	A	91	58.73906567	.00018733	000000-0	10039-2	0	4411
2	20496	43.0961	355.0567	0016727	159.5662	200.5865	15.14567637	57298			

RME

1	20497U	90	15	B	91	59.25905682	.00032507	000000-0	69853-3	0	4860
2	20497	43.1077	267.3477	0019801	233.7101	126.1995	15.43876274	58304			

Nadezhda 2

1	20508U	90	17	A	91	58.39006028	.000000289	000000-0	29806-3	0	2601
2	20508	82.9466	231.7155	0044651	357.9479	2.1562	13.73272162	50038			

OKEAN 2

1	20510U	90	18	A	91	60.06347692	.00004764	000000-0	71576-3	0	4297
2	20510	82.5232	220.9704	0019849	156.4760	203.7364	14.74225974	53903			

INTELSAT-6

1	20523U	90	21	A	91	58.42794678	.00008201	000000-0	57807-3	0	4484
2	20523	28.3333	30.2309	0014785	38.3981	321.7648	15.03153830	52883			

GPS BII-07

1	20533U	90	25	A	91	59.18812687	-.000000034	000000-0	99999-4	0	1252
2	20533	55.1793	5.6053	0033189	96.7147	263.6609	2.00564479	6737			

PegSat

1	20546U	90	28	A	91	58.25849628	.00023906	000000-0	13005-2	0	4427
2	20546	94.1438	351.2606	0141524	130.9297	230.4293	15.06115657	48393			

HST

1	20580U				91	60.25543000	.00009846	000000-0	10729-2	0	4005
2	20580	28.4701	51.9891	0006132	268.6369	91.3497	14.86465979	46231			

Glonass 44

1	20619U	90	45	A	91	59.38069853	-.000000018	000000-0	99999-5	0	3907
2	20619	65.0368	30.1539	0023485	219.2939	140.5356	2.13102995	6086			

Glonass 45

1	20620U	90	45	B	91	59.02929976	-.000000018	000000-0	99999-4	0	3988
2	20620	65.0375	30.1746	0007015	18.4482	341.5653	2.13102872	6086			

Glonass 46

1	20621U	90	45	C	91	58.61879392	-.000000018	000000-0	99999-4	0	3372
2	20621	65.0463	30.1983	0012671	213.7267	146.1749	2.13102417	6072			

Kristall

1 20635U 90 48 A 91 59.86774423 .00046690 00000-0 51718-3 0 3884
2 20635 51.6136 116.3877 0014224 355.2953 4.8154 15.62382923 42748

ROSAT

1 20638U 90 49 A 91 57.35832611 .00010381 00000-0 85091-3 0 2006
2 20638 52.9898 1.3292 0014794 30.1849 329.9997 14.99708855 40399

Meteor 2-19

1 20670U 90 57 A 91 60.04042831 .00000203 00000-0 17348-3 0 1571
2 20670 82.5447 84.7912 0014873 292.0976 67.8617 13.83917254 34045

CRRES

1 20712U 90 65 A 91 59.82459158 .00003328 00000-0 31341-2 0 1495
2 20712 18.0753 317.3785 7123101 6.8720 359.2714 2.43974135 5330

GPS BII-08

1 20724U 90 68 A 91 55.54435681 .00000016 00000-0 99999-4 0 845
2 20724 54.6996 186.1883 0096447 122.6748 238.2165 2.00563932 4103

Feng Yun1-2

1 20788U 90 81 A 91 59.60484625 .00000774 00000-0 53907-3 0 1023
2 20788 98.9495 95.3326 0016451 118.3792 241.9053 14.01053738 25000

Meteor 2-20

1 20826U 90 86 A 91 59.93798480 .00000221 00000-0 19085-3 0 1075
2 20826 82.5248 23.9742 0012545 178.3513 181.7700 13.83276374 21248

GPS BII-09

1 20830U 90 88 A 91 53.08839717 .00000013 00000-0 99999-4 0 847
2 20830 54.9052 128.6682 0075790 116.3433 244.4867 2.00566627 3138

GPS BII-10

1 20959U 90103 A 91 49.50749733 .00000016 00000-0 99999-4 0 233
2 20959 54.9247 188.0179 0043774 212.9318 146.7635 2.00569032 1654

DMSF B5D2-5

1 20978U 90105 A 91 59.89069553 .00001966 00000-0 74188-3 0 769
2 20978 98.8523 94.8230 0082406 96.3363 264.7391 14.30622161 12763

Soyuz TM-11

1 20981U 90107 A 91 59.99559763 .00096387 00000-0 10532-2 0 946
2 20981 51.6121 115.7313 0014544 359.5351 0.1864 15.62418048 13875

Glomass 47

1 21006U 90110 A 91 59.12723251 .00000020 00000-0 99999-4 0 797
2 21006 64.8426 149.6742 0062217 185.6321 174.3351 2.13102190 1765

Glomass 48

1 21007U 90110 B 91 58.36505836 .00000020 00000-0 99999-4 0 879
2 21007 64.8627 149.7321 0039606 178.9057 181.1297 2.13100301 1745

Glomass 49

1 21008U 90110 C 91 57.30934837 .00000020 00000-0 99999-4 0 757
2 21008 64.8395 149.7496 0009875 291.8984 68.0267 2.13100161 1722

Progress M6

1 21053U 91 2 A 91 60.05954928 .00099483 00000-0 10863-2 0 524
2 21053 51.6099 115.4196 0013435 2.0888 357.5971 15.62438568 7127

INFORMTR-1

1 21087U 91 60.28192998 .00000165 00000-0 16312-3 0 160
2 21087 82.9466 313.5746 0034240 198.7185 161.2717 13.74345653 4208

Cosmos 2123

1 21089U 91 7 A 91 59.03611006 .000000205 000000-0 20729-3 0 225
 2 21089 82.9245 184.9954 0028075 222.7862 137.1130 13.73861316 3157

1991 007B

1 21090U 91 7 B 91 58.06685507 .000000102 000000-0 99999-4 0 262
 2 21090 82.9225 185.6761 0022171 209.8507 150.1412 13.75280953 3011

1991 007C

1 21091U 91 7 C 91 58.35487223 .000001147 000000-0 11793-2 0 129
 2 21091 82.9304 185.4476 0027315 265.1117 94.7374 13.75472472 3051

Cosmos 2124

1 21092U 91 8 A 91 60.05357295 .00496705 39932-4 22132-3 0 607
 2 21092 62.8135 275.5820 0122427 100.3365 261.2287 16.06477241 3454

1991 004C

1 21095U 91 4 C 91 52.74631862 .14040784 -63317-5 72073-4 0 320
 2 21095 82.5491 261.3884 0019308 63.8189 298.2182 16.54899750 5681

Cosmos 2125

1 21100U 91 9 A 91 56.86347467 .000000009 000000-0 99999-4 0 77
 2 21100 74.0308 172.6529 0009766 140.3703 219.8063 12.49762573 1721

Cosmos 2126

1 21101U 90 9 B 91 56.82591456 .000000008 000000-0 99999-4 0 82
 2 21101 74.0305 172.8033 0019493 223.9385 136.0114 12.45872183 1691

Cosmos 2127

1 21102U 91 9 C 91 56.80286051 .000000008 000000-0 99999-4 0 107
 2 21102 74.0307 172.7919 0007201 219.6339 140.4183 12.47979047 1695

Cosmos 2128

1 21103U 91 9 D 91 56.84212215 .000000009 000000-0 99999-4 0 81
 2 21103 74.0304 172.5833 0014413 87.7345 272.5357 12.51713942 1707

Cosmos 2129

1 21104U 91 9 E 91 56.82234943 .000000009 000000-0 99999-4 0 82
 2 21104 74.0300 172.5831 0024461 86.7755 273.6096 12.53529066 1706

Cosmos 2130

1 21105U 91 9 F 91 56.86464416 .000000010 000000-0 99999-4 0 56
 2 21105 74.0296 172.3876 0043158 84.7436 275.8540 12.56965377 1717

Cosmos 2131

1 21106U 91 9 G 91 56.84531224 .000000011 000000-0 99999-4 0 81
 2 21106 74.0308 172.3501 0051251 74.8518 285.8199 12.58741458 1716

Cosmos 2132

1 21107U 91 9 H 91 56.72358317 .000000010 000000-0 99999-4 0 55
 2 21107 74.0300 172.6164 0033584 82.7872 277.7040 12.55284150 1709

1991 009J

1 21108U 91 9 J 91 59.74349381 .000000005 000000-0 99999-4 0 269
 2 21108 74.0437 170.0450 0166389 249.7116 108.5943 12.19594028 2035

1991 009K

1 21109U 91 9 K 91 59.77381282 .000000005 000000-0 99999-4 0 102
 2 21109 74.0347 170.1073 0172011 249.1076 109.1529 12.17434527 2049

1991 009L

1 21110U 91 9 L 91 59.69112065 .000000004 000000-0 99999-4 0 149
 2 21110 74.0533 170.5871 0236802 252.4088 105.1301 12.05310617 2018

1991 010A
1 21111U 91 10 A 91 56.13152466 -.00000115 00000-0 99999-4 0 185
2 21111 2.2976 282.5443 0006283 287.4968 72.2426 1.00273179 121
1991 010D
1 21114U 91 10 D 91 57.75891209 .00003719 00000-0 23943-2 0 43
2 21114 47.3569 277.6983 7273417 3.2289 359.8122 2.26756827 276
1991 009M
1 21115U 91 9 M 91 57.33237438 .00000005 00000-0 99999-4 0 34
2 21115 74.0448 173.1989 0185189 246.0734 112.1029 12.15398698 1756
1991 011A
1 21116U 91 11 A 91 59.89864408 .00301689 11036-4 20500-3 0 256
2 21116 64.7243 272.3823 0039978 18.4836 341.7804 16.14451233 2180
Molniya1-80
1 21118U 91 12 A 91 58.03185145 .00000761 00000-0 38582-2 0 157
2 21118 62.7934 323.0498 7438488 280.1214 10.9636 2.00579157 242
1991 012B
1 21119U 91 12 B 91 57.21907702 .18266259 43310-4 34654-3 0 302
2 21119 62.7913 283.1420 0027401 138.9419 221.7273 16.44359249 1690
1991 012D
1 21121U 91 12 D 91 58.85477760 -.00001216 00000-0 -37532-2 0 273
2 21121 62.7254 323.2493 7398720 280.0775 11.2119 2.05500470 251
1991 013A
1 21130U 91 13 A 91 59.07816774 .00000107 00000-0 99999-4 0 72
2 21130 82.8241 255.3542 0065038 272.9942 86.3778 13.77534554 268
1991 013B
1 21131U 91 13 B 91 60.09179564 .00000110 00000-0 99999-4 0 69
2 21131 82.8204 254.5850 0057922 268.6201 90.8321 13.79123978 400
1991 014B
1 21133U 91 14 B 91 60.07820174 .04062257 59725-4 46315-3 0 58
2 21133 51.6590 244.7651 0005352 310.5388 49.6165 16.36091739 152
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The new techs are TECHNICIANS. Techs are techs. Why in the world would
they be restricted to NOVICE power levels? They are TECHNICIANS above
30MHz. NO DIFFERENCE!!!!

Mike Yetzsko N1DVJ

End of Info-Hams Digest
